



National Transportation Safety Board

Marine Accident Brief

Allision of Barge *Gayle Force*, Under Tow by Tugboat *Simone*, with Norfolk Southern Bridge #7

Accident no.	DCA15LM021
Vessel names	<i>Gayle Force</i> , <i>Simone</i>
Accident type	Allision
Location	Chesapeake, Virginia, 36°46.5' N, 076°17.7' W
Date	April 26, 2015
Time	0720 eastern daylight time (coordinated universal time – 4 hours)
Injuries	None
Damage	Estimated \$1.8 million damage to the bridge
Environmental damage	None
Weather	Overcast, visibility 6 miles*, winds 5 knots from the north, air temperature 50°F
Waterway information	Southern Branch of the Elizabeth River, calm with 0.5 knot ebb current

At 0720 on April 26, 2015, the barge *Gayle Force* struck the unmanned Norfolk Southern Railway Bridge #7 (NS#7) on the Southern Branch of the Elizabeth River in Chesapeake, Virginia, while being towed by the tugboat *Simone*. The allision caused \$1.8 million in damage to the bridge and stopped rail traffic for nearly 36 hours. Damage to the barge was negligible. No one was injured, and there was no pollution associated with the accident.

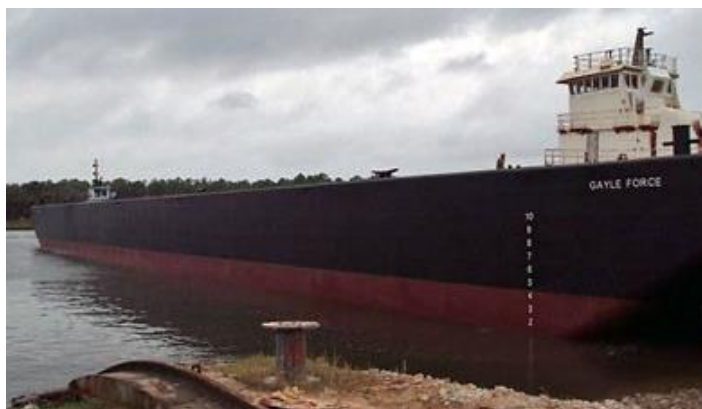


Photo left is barge *Gayle Force*, unloaded. Photo right is tugboat *Simone* under way. (Photos courtesy of Coastal Precast Systems and Will Van Dorp, tugster.wordpress.com)

* Unless otherwise noted, all miles in this report are statute miles.

Allision of Barge *Gayle Force*, Under Tow by Tugboat *Simone*, with Norfolk Southern Bridge #7

Accident Events

The tugboat *Simone* was a steel-hull, twin-screw, uninspected towing vessel operated primarily in the open ocean coastwise trade. The tugboat had control levers on both the port and starboard sides of the wheelhouse to allow the person maneuvering the vessel to stand on either side. Large windows afforded the operator a good view forward, but gear, stanchions, railings, and the stack obstructed the view aft.



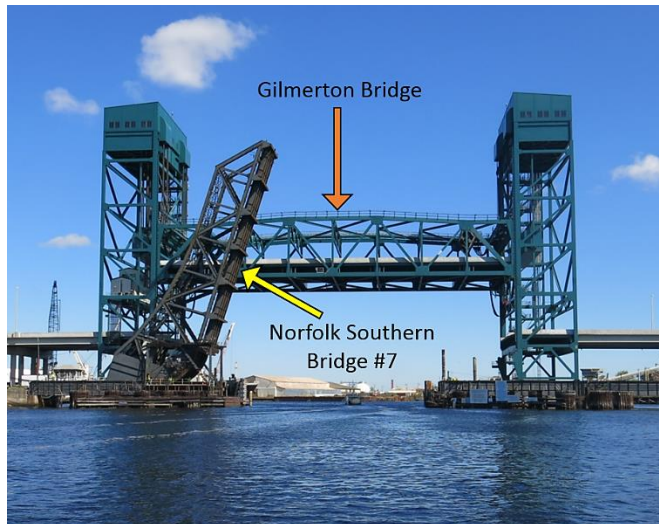
The *Simone* had a crew of five: the captain, a mate, an engineer, and two deckhands. The captain held credentials for Master of Vessels Not More Than 1,600 Gross Registered Tons and Master of Towing Vessels. He stated that he had more than 40 years' experience in towboat operations, but most of this experience was in off-shore towing. The captain said that he had made only one previous transit through the NS#7 bridge while towing an empty barge.

On the evening before the allision, the *Simone* arrived at the Coastal Precast Systems (CPS) facility located on the eastern shore of the Southern Branch of the Elizabeth River. Company orders were to tow the barge *Gayle Force* and its cargo of large pre-cast concrete sections from the facility to the New York City area. When *Simone* arrived at CPS, the only

barge-related information passed from the prime contractor to the tugboat company was the name, length, and breadth of the barge and that it had a load line approved by the American Bureau of Shipping. The weight and height of the cargo was not provided or requested.

The *Gayle Force* was a 220-foot-long, 56-foot-wide, flat-deck barge fitted with structural I-beams that were vertically welded to the outboard perimeter of the deck. The I-beams helped secure the cargo, 2,260 long tons of large pre-cast concrete sections, from sliding off the deck. Shortly after the *Simone* arrived, the crew made fast their towing wire to the barge's towing bridle so they would be ready to commence a stern tow when an assist tugboat arrived at 0700 the next morning. According to *Simone*'s captain, the length of the tow wire and bridle was approximately 200 feet. *Gayle Force* was moored between two east-west concrete piers and aligned nearly perpendicular to the north-south axis of the river.

Allision of Barge *Gayle Force*, Under Tow by Tugboat *Simone*, with Norfolk Southern Bridge #7



NS#7 crosses the southern branch of the Elizabeth River about 0.7 mile north of the CPS piers. The truss construction railroad bridge lifts to the open position by pivoting about a trunnion located on the western bank of the river. It is controlled remotely by a Norfolk Southern operator stationed at Norfolk Southern Bridge #5. The bridge normally remains in the open position until train traffic requires it to be closed. When the bridge is open, the channel has a navigable width of 145 feet. Immediately to the north of the bridge lies the Gilmerton Bridge, a through truss vertical lift roadway bridge. After passing

through these bridges, the main channel of the river makes a 90-degree turn to the west. *Coast Pilot 3*, a publication that provides detailed information about the waterway, warns “large vessels must exercise caution when making the turns to these bridges because of the current.”¹ The *Simone* captain said he consulted the chart for the area but did not look at the *Coast Pilot*. At the time of the accident, the current was ebbing about 0.5 knot—a following current that acted to increase the barge’s speed over ground.

About 0640 on 26 April, the 1,100-horsepower, twin-screw assist tugboat *Maverick* arrived at the CPS berth. The *Simone* was the lead tugboat for this towage; therefore, the captain of the *Simone* was responsible for positioning and providing directions to the captain of *Maverick*. *Maverick*’s captain was a licensed pilot for these waters, had made many transits through the NS#7 bridge opening, and was aware the river current set “to the right” (east bank) on an ebb tide.

Prior to getting under way, the *Simone* captain did not hold a company-required pre-tow safety briefing and did not discuss the towage evolution with the *Maverick* captain. When the *Maverick* captain questioned the *Simone* captain as to “what he needed me to do,” the *Simone* captain replied, “just keep an eye on the barge as I pull it out and then get a line on the back end somewhere.” The *Simone* captain also did not brief his crew, as required by the towing company, on their specific duties for the bridge transit. The owner later confirmed that the company did not have a system for verifying that the bridge transit safety brief was being conducted.

About 0645, the *Simone* captain told the *Maverick* captain that he needed someone from the *Maverick* to let go the barge’s lines to the dock and needed clearance from CPS to proceed. According to the *Maverick* captain, the *Simone* captain seemed “very eager to get out of the dock.” He stated further that the *Simone* captain questioned the wait and seemed “very anxious.” Upon receiving clearance to proceed from CPS management about 0700, the *Simone* captain directed the

¹ The *United States Coast Pilot* is a series of nine nautical books published by the National Oceanic and Atmospheric Administration (NOAA). Issued according to geographical region, they supplement the navigational information shown on NOAA nautical charts. The books report on a range of topics, from channel descriptions to towage, and are updated frequently with information from a host of public, private, and government sources.

Allision of Barge *Gayle Force*, Under Tow by Tugboat *Simone*, with Norfolk Southern Bridge #7

barge's lines be let go. This would be the captain's first towage of a loaded barge through the NS#7 bridge opening and his first towage of the *Gayle Force*.

According to CPS's vice president and general manager, the barge moved "abruptly out of the slip." The *Simone* needed to pull the tow at about a 90-degree angle so the tow could proceed northward toward NS#7. As the barge was pivoted to the north by *Simone*, the port side of the barge closed rapidly on CPS's southern pier. The *Maverick*, which was made up to the stern of the *Gayle Force*, had to push on the barge to prevent it from damaging the pier.

As the barge moved into the river, the *Maverick* captain stated he told the *Simone* captain he could not see much back where he was, so he would need direction from the *Simone*. The *Simone* captain replied "okay." After the barge straightened out in the river, the *Maverick* captain said the tow proceeded "a little bit fast" toward NS#7.



Starboard quarter of *Gayle Force* with pre-cast cement structures on deck and tugboat *Maverick* in background. (Video frame capture courtesy of Norfolk Southern Corporation)

The *Simone* captain stated he stood at the starboard wheelhouse conning station, and he asked the tugboat's mate to stand on the starboard bridge wing. The mate said he was "assigned no specific duties" and was an "observer helping go through the bridges." He stated that while he looked aft, as the barge was 60–70 meters from the bridge, he told the captain they needed to go to the left. The captain stated that he pulled the barge toward the left, but "it took a dive to the right." Investigators reviewed video of the accident that showed the barge being set to the right of the channel by the current but maintaining a relatively constant heading.

At 0720, the starboard bow of the *Gayle Force* struck the southeast fendering dolphin and concrete piers supporting the NS#7 bridge span. According to automatic identification system (AIS) data, the barge was making a speed of 4.4 knots when it struck the bridge. The timber dolphin was crushed and deformed, and the piers shifted laterally 15 inches toward the north. The rail alignment between the lift span and stationary track was misaligned by 11 inches, shutting down railroad traffic for 36 hours.

After the allision, the *Gayle Force* continued through the bridge and proceeded to an anchorage to await the arrival of Coast Guard officials.

Allision of Barge *Gayle Force*, Under Tow by Tugboat *Simone*, with Norfolk Southern Bridge #7



Photo left shows damage to NS#7's timber fendering dolphin. Photo right shows misaligned rails caused by the shifting of concrete piers.

Accident Analysis

Inadequate planning, preparation, or information were frequent causes of bridge allisions cited in a 2003 US Coast Guard/American Waterways Operators (AWO) Bridge Allision Work Group report, and in 2013 the AWO required member towing companies to adopt bridge transit procedures under its Responsible Carrier Program (RCP).² The *Simone*'s company, an AWO member, provided a Vessel Policy and Procedures Manual containing a detailed section for bridge transits. This section was subdivided into three subsections titled "Before the Transit," "Safety Briefing," and "During the Transit." These subsections enumerated what the watch officer in charge of the transit must take into account for a safe bridge transit and what instructions should be provided to the crew on the towing vessel and any assist vessel. The instructions included:

- briefing the crew on their specific duties,
- discussing unique characteristics of the tow, including blind spots and the location of the crew and assist tugboat, and
- determining the tow configuration best suited to transit bridges safely "including the use of assist boats if utilized."

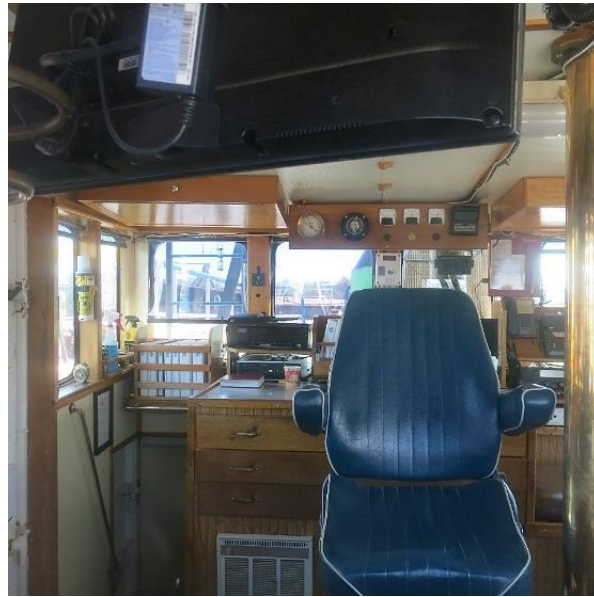
The *Simone* captain did not plan for the bridge transit in accordance with his company's policies and procedures. He did not have a clear view astern, so he relied on the mate to assist him in properly aligning the tow for the passage. But he gave no instruction to the mate. The tugboat *Maverick* was provided to assist the tow for the bridge transits of the Elizabeth River, yet the captain of *Simone* did not use the assist tugboat or ask for the *Maverick* captain's advice despite the latter's extensive experience in these waters. The *Maverick* captain was not given any directions, and the assist tugboat was placed in a location where his view was obstructed.

² (a) US Coast Guard and American Waterways Operators. *Coast Guard Bridge Allision Work Group Report*, May 21, 2003; (b) American Waterways Operators, *Responsible Carrier Program*, 2013.

Allision of Barge *Gayle Force*, Under Tow by Tugboat *Simone*, with Norfolk Southern Bridge #7

Furthermore, *Simone*'s captain did not review *Coast Pilot 3* prior to getting under way. As a result of inadequate planning, he did not take into account the current set in the vicinity of the bridge.

Although the company had procedures in place regarding bridge transits, it did not have a system for verifying its crews were following those procedures. Sound company policies and guidance are only effective if they are practiced. If the captain had planned and briefed the bridge transit as required, it may have prevented the allision.



View from *Simone*'s starboard conning station looking aft through wheelhouse windows.

Probable Cause

The National Transportation Safety Board determines that the probable cause of the allision of the barge *Gayle Force* with the Norfolk Southern Bridge #7 was the *Simone* captain's failure to plan for the bridge transit and effectively use the assist tugboat.

Allision of Barge *Gayle Force*, Under Tow by Tugboat *Simone*, with Norfolk Southern Bridge #7

Familiarization with Local Recommendations

The allision of the barge *Gayle Force* with the Norfolk Southern Bridge #7 occurred in a location that was identified as an area requiring caution due to currents. Vessel operators should be familiar with, and heed the recommendations of, publications such as the *United States Coast Pilot*. This is the second NTSB investigation closed this year where *Coast Pilot* guidance was either not reviewed or disregarded (see NTSB Marine Accident Brief MAB-16/05). In this accident, the captain of the *Simone* also failed to use the local expertise of his assist tugboat captain.

Company Policies and Oversight

The owner of the *Simone* had policies in place that, if followed, may have prevented the allision. Sound company policies and guidance are only effective if they are put into practice. Vessel owners/operators should implement regular audits or checks to verify that crewmembers understand and comply with policies as required.

Vessel Particulars

Vessels	<i>Simone</i>	<i>Gayle Force</i>
Owner/operator	Tradewinds Towing LLC	Land Air Sea Inc.
Port of registry	St. Augustine, Florida	Chesapeake, Virginia
Flag	United States	United States
Type	Tugboat	Deck cargo barge
Year built	1970	2009
Official number (US)	525754	1223495
IMO number	7029548	-
Construction	Steel	Steel
Length	120 ft (31.6 m)	220 ft (67 m)
Draft	13 ft 6 in (4.1 m)	11 ft (3.34 m)
Beam/width	31 ft (9.4 m)	56 ft (17.1 m)
Gross and/or ITC tonnage	177 / 347 tons	1,258 gross tons; 1,561 ITC tons
Engine power; manufacturer	3,000 hp (2237kW); G.M.	None
Persons on board	5	None

NTSB investigators worked closely with our counterparts from Coast Guard Sector Hampton Roads throughout this investigation.

For more details about this accident, visit www.nts.gov and search for NTSB accident ID DCA15LM021.

Adopted: September 14, 2016

The NTSB has authority to investigate and establish the probable cause of any major marine casualty or any marine casualty involving both public and nonpublic vessels under 49 *United States Code* 1131. This report is based on factual information either gathered by NTSB investigators or provided by the Coast Guard from its informal investigation of the accident.

The NTSB does not assign fault or blame for a marine casualty; rather, as specified by NTSB regulation, “[NTSB] investigations are fact-finding proceedings with no formal issues and no adverse parties . . . and are not conducted for the purpose of determining the rights or liabilities of any person.” 49 *Code of Federal Regulations*, Section 831.4.

Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by conducting investigations and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report. 49 *United States Code*, Section 1154(b).
